## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/000119

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|                                                                                                                         | CATION OF SUBJECT MATTER 7 F02F5/00, F16J9/06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                        |
| According to Int                                                                                                        | ternational Patent Classification (IPC) or to both nation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | al classification and IPC                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                        |
| B. FIELDS SE                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                        |
| Minimum docum<br>Int.Cl                                                                                                 | nentation searched (classification system followed by c F02F1/00-11/00, F16J1/00-1/2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | lassification symbols)<br>4, F16J7/00-10/04                                                                                                                                                                                         | <b>1</b>                                                                                                                                                                                                                                                                                                               |
| Jitsuyo<br>Kokai J                                                                                                      | ments are listed in the continuation of Box C.  The of the consulted deviate of the art which is not considered fair relevance. The solution of the published on or after the international date of the art which is not considered for relevance and published on or after the international date of the art which is not considered for the graph published on or after the international crance be consulted down dute of a priority claim(s) or which is to the published on or after the international crance be considered for the international date of the art which is not considered for relevance the claim of the continuation of the considered for the international date of the art which is not considered for relevance the claim of the continuation of the considered for relevance the claim of the considered for relevance the claim of the considered for the international date of the art which is not considered for relevance the claim of the continuation of the considered for relevance the claim of the continuation of the considered for the international filing date or priority date of the art which is not considered for the international date of the art which is not considered for relevance the claim or or other than the continuation of the considered for the continuation of the considered for the continuation of the cont |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                        |
| Dictionic data t                                                                                                        | asse consulted during the international scarcii (name of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | uata base aliu, where practica                                                                                                                                                                                                      | ore, search terms used)                                                                                                                                                                                                                                                                                                |
| C. DOCUMEN                                                                                                              | VTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                        |
| Category*                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                               | sages Relevant to claim No.                                                                                                                                                                                                                                                                                            |
| Y<br>A                                                                                                                  | 27 August, 1999 (27.08.99),<br>Par. No. [0019]; Fig. 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Corp.),                                                                                                                                                                                                                             | •                                                                                                                                                                                                                                                                                                                      |
| Y<br>A                                                                                                                  | 12 November, 1996 (12.11.96),<br>Par. No. [0005]; Fig. 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                        |
| Further documents are listed in the continuation of Box C.                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | See patent family am                                                                                                                                                                                                                | nex.                                                                                                                                                                                                                                                                                                                   |
| A document de to be of parti  "E" earlier applie filing date document we cited to estal special reaso  "O" document ref | cories of cited documents:  If the general state of the art which is not considered cular relevance ation or patent but published on or after the international hich may throw doubts on priority claim(s) or which is blish the publication date of another citation or other in (as specified)  Ferring to an oral disclosure, use, exhibition or other means blished prior to the international filing date but later than the claimed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | "X" document of particular reconsidered novel or can step when the document of particular reconsidered novel or can step when the document of particular reconsidered to involve a combined with one or mobeing obvious to a persor | ith the application but cited to understand derlying the invention elevance: the claimed invention cannot be not be considered to involve an inventive is taken alone elevance: the claimed invention cannot be in inventive step when the document is one other such documents, such combination a skilled in the art |
| 18 Apri                                                                                                                 | completion of the international search  1, 2005 (18.04.05)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                         | gaddress of the ISA/<br>e Patent Office                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Authorized officer                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                        |
| Facsimile No.                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Telephone No.                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                        |

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| (Continuation) | DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                       |              | · · · · · · · · · · · · · · · · · · · |
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| Category*      | Citation of document, with indication, where appropriate, of the relevant                                                                                                                                                                                                 | ant passages | Relevant to claim No.                 |
| Y              | Microfilm of the specification and drawing annexed to the request of Japanese Utility Model Application No. 8937/1984 (Laid-open No. 122554/1985) (Kawasaki Heavy Industries, Ltd.), 19 August, 1985 (19.08.85), Page 3, line 18 to page 4, line 8; Fig. 2 (Family: none) | 9-12         |                                       |
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